COMPARISON OF INTERSCALENE BLOCK/GENERAL ANESTHESIA VERSUS GENERAL ANESTHESIA: INTEROPERATIVE, POSTOPERATIVE AND NEUROLOGIC OUTCOMES AFTER AMBULATORY SHOULDER SURGERY

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Introduction: Interscalene block (ISB) is often used in combination with general anesthesia (GA) to improve pain relief after outpatient shoulder surgery. This may decrease postoperative opioid requirements and the incidence of post-operative nausea and vomiting (PONV) thereby reducing the risks for delay in discharge or hospitalization. Given recent concerns of potential serious complications of ISB, this study evaluates the clinical impact of ISB on postoperative pain control, neurologic symptoms, side effects and patient satisfaction after outpatient shoulder surgery.
Methods: Following IRB approval, 131 consecutive patients who had shoulder surgery under combined ISB/GA or GA alone were studied. ISB was performed in standard manner using nerve stimulator and admixture of 20ml levobupivacaine 0.62% and 20ml lidocaine 2% with epinephrine 1:200,000. All patients received standardized GA with propofol/N_2O, supplemented with bolus doses of sufentanil. Postoperative pain was treated with iv morphine or oral analgesics. Post-discharge pain was treated with oral hydrocodone. Pain scores were recorded on admission, on transfer to Phase 1 and 2 recovery and at discharge. Patients were interviewed 24hr, 48hr and 7 days postop about level of pain, use of analgesics, quality of sleep, PONV and any residual numbness, tingling or muscle twitching. Data were analyzed by chi-square and t-tests and are presented as mean (SD).
Results: 87 patients (29 female; 45 [18-70] yrs) received ISB/GA and 44 patients (13 female; 47 [18-75] yrs) received only GA. Both groups had similar preop pain scores. Intraop use of sufentanil was less with ISB, 17 (6.6) vs. 22 (6.4) mcg with GA ($p<0.01$) and inter-operative blood pressure was lower (98/58 vs. 114/71) and had 30% less variance. ISB offers improved pain relief in the immediate postoperative period (Phase 1: 1.6 vs. 5.8, Phase 2: 1.6 vs. 4.2 and Discharge: 1 vs. 3.2) but does not offer preemptive analgesia in the days following discharge. Postop IV opioids were required in 57% of GA vs. 16% of ISB and antiemetics - by 16% of GA and 9% of ISB. Follow-up was accomplished in 67% of GA and 75% of ISB. All patients required hydrocodone and pain scores and drug use were similar in the two groups. Disturbed sleep was reported by 66-75 % of patients in both groups. There were no severe neurologic complications. There was transient numbness, tingling or muscle twitching in the upper extremity in 42% (at 24h) and 30% (at 48h) of ISB; these were still present at 7 days in 14% of patients. Notably, new onset numbness and tingling were also reported by 13% (24h), 27%(48h) and 18% (7d) of GA patients. More than 95% of patients were highly satisfied with the anesthesia.
Discussion: These results indicate superior pain control with ISB during the immediate postop period, with less opioid use and PONV. There was low incidence of side effects and high degree of patient acceptance of ISB. Postop pain and analgesic requirements for one week were comparable; further studies are required to evaluate if patients with ISB incur significant longer-term benefits. While the effects of residual ISB may be present for up to 24h, the similar incidence of neurologic symptoms at 48h and 7 days after GA alone indicate that there are other significant risk factors unrelated to ISB (e.g., positioning, surgical technique) that must be considered before attributing such effects to ISB.